REMARKS

This paper is responsive to the Final Rejection dated May 20, 2005. Claims 1, 4-9, and 14-35 were examined. Claims 1, 4, 6 – 9, and 27 – 33 have been canceled. Claim 25 has been amended to cure an antecedent basis error. Claim 28 has been amended to correct grammar. Claim 5 has been amended to incorporate the limitations of parent claim 1 and intervening claim 4. Claim 26 has been amended to incorporate the limitations of now canceled claims 29 and 31.

Preliminary Matters

Applicant respectfully disagrees with the Examiner's assertions regarding failure to comply with 37 C.F.R. §1.111(b). Below, Applicant has again provided arguments clearly emphasizing the failure of the cited references to disclose or suggest the claims.

In addition, many of the rejections (particularly the rejections of claims 21, 22, 24, and 25) are supported with nothing more than factual assertions that are not properly based upon common knowledge.

> Any rejection based on assertions that a fact is well-known or is common knowledge in the art without documentary evidence to support the examiner's conclusion should be judiciously applied. Furthermore, as noted by the court in *Ahlert*, any facts so noticed should be of notorious character and serve only to "fill in the gaps" in an insubstantial manner which might exist in the evidentiary showing made by the examiner to support a particular ground for rejection. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based. See *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697; *Ahlert*, 424 F.2d at 1092, 165 USPQ 421.

Rejections under 35 U.S.C. §103

Kikinis

Claims 1, 4-9, 14-18 and 21-22 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,502,838 issued to Kikinis (hereinafter "Kikinis"). Applicant again traverses these rejections. The Examiner oversimplifies both Applicant's claimed invention and Kikinis' disclosure by "swapping" T and T_{TH} and the Examiner completely disregards that the limitations of the claims are completely opposite of that disclosed in Kikinis.

- 6 -

Claims 1, 4, and 6 – 9 have been canceled. Claim 5 has been amended to include the limitations of now canceled claims 1 and 4.

Claims 14, 15, 5, and 16 – 18 – Recited Limitations Opposite of Kikinis

The independent claims 14 and 15 and the dependent claims 5 and 16 – 18 recite limitations regarding increasing or decreasing performance, frequency or voltage based on whether a temperature difference is positive or negative. As recited in the claims, a positive temperature difference indicates that the measured temperature exceeds or is greater than a desired operating temperature (i.e., a temperature threshold), and a negative temperature difference indicates that the measured temperature is below or less than the desired operating temperature.

Claim 14 recites "increasing a performance state of the processor when the temperature difference of the temperature reading from the desired operating temperature is positive." Claim 15 recites "the clock signal has a frequency that is increased when the temperature difference is positive," which is similarly recited in claim 5. Claim 16 recites "the voltage applied to the voltage input is increased when the temperature." Claim 17 recites "the frequency of the clock signal is decreased when the temperature difference is negative." Claim 18 recites "the voltage applied to the voltage input is decreased when the temperature difference is negative."

As can be seen from the recited limitations, the voltage, performance state, or clock signal frequency is increased when temperature difference is positive (if the temperature reading is greater than the desired operating temperature, then temperature reading minus desired operating temperature equals a positive difference), and the voltage, performance state, or clock signal frequency is decreased when the temperature difference is negative (if the temperature reading is less than the desired operating temperature, then temperature reading minus desired operating temperature equals a negative difference). In clear contrast, Kikinis lowers clock rate of operating voltage when a measured temperature (T) is greater than a programmable temperature threshold (T_{TH}).

The Examiner's rationale for the rejection is that "it would have been obvious to one having ordinary skill in the art at the time the invention was made that the activity indications

- 7 -

could have just as well been based on difference values obtained using T_{TH}-T. Therefore, the positive and negative difference values are merely values based on the same T and T_{TH} values taught by Kikinis but change the order of the values in the difference computation." Regardless of the swapping performed by the Examiner, **the claimed positive difference represents increased temperature and the claims recite increasing performance state in response to increased temperature, which is completely opposite of that disclosed by Kikinis.**

In view of the above differences, Applicant asserts that independent claims 14 and 15 and dependent claims 5 and 16 – 18 are not obvious in light of Kikinis. The rejection of the claims should be withdrawn and the claims allowed.

Claim 21

To reject claim 21, the Examiner states the following:

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In this case, Kikinis provides ample motivation and
suggestion for one of ordinary skill in the processor
power/temperature control art to disable automatic mode of
operation by teaching that the threshold temperature can be
programmably set by the user to a desired temperature
setting.  In addition, the knowledge generally available to
one of ordinary skill in the art would allow a user to
disable automatic systems or to set automatic system
parameters so that the automatic system features do not
operate under normal operating conditions so that they will
not interfere with tasks such as downloading, copying,
audio, and video tasks.  Furthermore, one of ordinary skill
in the art would be motivated to allow a user to disable
the automatic features if they interfere with the
performance of tasks such as downloading, copying, audio,
and video tasks.
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Once again, the Examiner makes an assertion that lacks any basis in the reference. Kikinis does disclose a programmable temperature threshold T_{TH}. As admitted by the Examiner, Kikinis fails to disclose or suggest a computing system with a manual clock speed mode of operation and an automatic temperature-based mode of operation as recited in claim 21. The entire rationale for the rejection of claim 21 relies upon the Examiner's own statements about preventing interruption of downloads without any reliance upon a reference or evidentiary support beyond a programmable temperature threshold in Kikinis. "'[T]he Board [or examiner] must point to

- 8 -

some concrete evidence in the record in support of these findings' to satisfy the substantial evidence test." MPEP 2144.04, *quoting* In re Zurko, 258 F.3d at 1386, 59 USPQ2d at 1697.

> If the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding. MPEP 2144.04, *quoting* Zurko, 258 F.3d at 1386, 59 USPQ2d at 1697. *See* 37 CFR §1.104(d)(2). MPEP 2144.04.

Applicant requests identification of a reference that discloses or suggests the assertions by the Examiner, and indication of relevance to the claim. The rejection of claim 21 should be withdrawn at least because the Examiner has not provided any reference that discloses or suggests all of the limitations of claim 21.

Claim 22

To reject claim 22, the Examiner simply states that the claim would be obvious, and then states that it "would allow for a smoother series of adjustments in the processor clock frequency and avoid sudden spikes in the temperature measurements and frequency adjustments." In rejecting claim 22, the Examiner again relies on a factual assertion that is not properly based upon common knowledge, essentially basing the factual assertion upon the Examiner's personal knowledge. Unless the Examiner can comply with the requirements of 37 C.F.R. §1.104(d)(2), Applicant asserts that the rejection must be withdrawn because the Examiner has not provided any reference that discloses or suggests all limitations of claim 22.

Kikinis and Atkinson

Claims 19-20 and 23-25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kikinis in view of U.S. Patent No. 6,336,080 issued to Atkinson (hereinafter "Atkinson"). The Examiner does not address the limitations of claims 24 and 25. The Examiner simply makes a general allegation that all of the claims are unpatentable because Kikinis discloses a T_{TH} and Atkinson discloses a lookup table with temperatures and respective fan speeds and CPU speeds. Claim 24 recites "wherein the desired operating temperature is computed based on a plurality of factors, the plurality of factors including the current frequency, voltage, and temperature of the processor device." Claim 25 recites "wherein the desired operating temperature is modified based on environmental variations affecting the processor device." The programmable threshold

- 9 -

response after final rejection.doc   Application No.: 10/072,480

PAGE 12/15 * RCVD AT 7/25/2005 11:21:25 AM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/25 * DNIS:2738300 * CSID:512 338 6301 * DURATION (mm-ss):05-08

disclosed by Kikinis is not computed based on any factors, but it is simply set by a user. Atkinson discloses a reference voltage that sets the predetermined low and high temperature 'trip points'." There is no disclosure or suggestion to compute a desired operating temperature based on frequency, voltage, and temperature, or to modify based on environmental variations that affect the processor device. There is no disclosure of computing any value based on frequency or temperature, much less frequency, temperature, and voltage. Applicant respectfully notes that

> To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." MPEP 2143.03 *quoting* In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

The Examiner has not established prima facie obviousness of claim 24 and 25 at least because 1) the Examiner fails to even address the limitations of the rejected claims 24 and 25, and 2) none of the cited references disclose or suggest the limitations of the claims 24 or 25. The rejections of claims 24 and 25 should be withdrawn since the Examiner has not supplied a reference that discloses or suggests all of the limitations of claims 24 or 25.

Rejections under 35 U.S.C. §102

Thomas

Claims 26-27 and 29-33 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,752,011 issued to Thomas et al. (hereinafter "Thomas"). Claims 27 and 29 – 33 have been canceled. Claim 26 has been amended to incorporate the limitations of now canceled claims 29 and 31. Although Thomas discloses selecting a clock mode based on input from a temperature sensor and an activity detector (see Table II at column 9, lines 40 – 50 and Figure 10), Thomas does not disclose or suggest increasing performance when user activity increases as indicated by measured temperature exceeding a temperature threshold. Instead, Thomas, similar to Kikinis, discloses the opposite. Thomas discloses preventing selection of a fast clock mode if chip temperature is "hot" to prevent overheating (*see* column 7, lines 51 - 57). Applicant respectfully submits that Thomas fails to disclose or suggest the amended claim 26, and never disclosed or suggested now canceled claim 31.

- 10 -

response after final rejection.doc   Application No.: 10/072,480

PAGE 13/15 * RCVD AT 7/25/2005 11:21:25 AM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/25 * DNIS:2738300 * CSID:512 338 6301 * DURATION (mm-ss):05-08

Kikinis

Claims 26-28, 30 and 33 are rejected under 35 U.S.C. §102(b) as being anticipated by Kikinis. Once again, Kikinis discloses the opposite of the claimed subject matter. As stated above with regard to independent claims 14 and 15, Kikinis discloses *decreasing* performance when a measured temperature *exceeds* a temperature threshold. Claim 26 recites *increasing* performance when activity is high or increased, and activity is high or increased when measured temperature *exceeds* a temperature threshold. Applicant respectfully requests that the rejection of claim 26 be withdrawn since none of the art of record discloses or suggests all of the limitations of claim 26.

Atkinson

Claims 34-35 are rejected under 35 U.S.C. §102(e) as being anticipated by Atkinson. The Examiner refers to a look-up table in Atkinson and column 7, lines 12 – 15 of Atkinson. Rejection of claim 34 relies upon Atkinson disclosing

> For example, as fan use is highly effective and does not affect the operating parameters of the computer, it is implemented as a first defense against a rising working temperature.
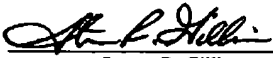
Applicant fails to understand how disclosure of fan use against rising working temperature is applied against claim 34. Claim 34 recites "means for increasing performance of the set of processors if a temperature measured by the temperature sensor exceeds a desired operating temperature stored in the store unit." In the Office Action, the Examiner simply recites claim 34 and cites this above quoted section of Atkinson. Applicant respectfully submits that neither the above quoted section of Atkinson, nor any other section of Atkinson discloses or suggests claim 34 or claim 35 and requests that the rejection be withdrawn.

For at least the reasons given above, neither Kikinis, Thomas, nor Atkinson, standing alone or in combination, disclose or suggest any of Applicant's claims.

- 11 -

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Conclusion

In summary, claims 5, 14 – 26, and 34 – 35 are in the case. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

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- 12 -

response after final rejection.doc

Application No.: 10/072,480